CEOS IDN Newsletter

Edited by Lola Olsen | Designed by Chrissy Chiddo | WGISS 25 | Issue 24 | February 2008

Martha Maiden to Begin Tenure as WGISS Chair

WGISS Chair, Martha Maiden and WGISS Secretariat, Michelle Piepgrass, photographed during the CEOS Plenary Meeting in Hawaii (Nov. 2007).

A special greeting to the IDN Task Team. I am so pleased to begin my service in the capacity of your CEOS WGISS Chair. I want to tell you that bringing greetings to the IDN team in WGISS is for me more than a memory. It's closer to a déjà vu. When I first attended the CEOS Working Group on Data, WGISS's precursor, as the NASA delegate, in the early 1990s, the CEOS IDN was the WGD's most developed and tangible asset. As I read the message of the outgoing Chair of WGISS in the last issue of the CEOS IDN Newsletter, Ivan Petiteville's statements that the IDN - a worldwide, interoperable, and friendly system - is a unique source of information for GEO struck me also as "déjà vu".

The upcoming joint CEOS WGISS-25/WGCV-28 meeting in China will be my first opportunity to serve as your CEOS WGISS Chair, having assumed the position at the November 2007 21st CEOS Plenary Meeting, held on Big Island of Hawaii. It was truly enjoyable to attend a CEOS Plenary for the first time in eight years. Being the satellite arm of GEO has really energized and focused CEOS. It was evident there that WGISS has developed a very good reputation in CEOS.

It's my view that WGISS and its Task Teams, including IDN, will continue to think strategically so that we can be poised to provide needed data and services in advance of customer requests. As your chair, I hope to facilitate CEOS WGISS progress and highlight accomplishments that help implement the satellite-based arm of the GEO "System of Systems".

As I returned to WGISS-23 and WGISS-24, my first WGISS meetings since WGISS-6 in Frascati in 1998, I saw a focus on demonstrations of new information technologies. If WGISS can bring to bear these newly demonstrated technologies to act on the CEOS agency assets, I believe it will have a fundamental and crosscutting impact on GEO and all its Societal Benefit Areas. WGISS and its members have been very successfully providing data to our user communities, such as scientists and operational users, over the years. If our data sets are well described and accessible, they can and will be successfully reused and repurposed for these multidisciplinary uses.

I'd like to take the opportunity to introduce Michelle Piepgrass, who is the incoming WGISS Secretariat. Michelle and I worked as a team in the 1980s at NOAA with the Defense Meteorological Satellite Program, and we are now teaming up again. Michelle attended WGISS 24, and the CEOS Plenary meeting in Hawaii. Our energies are currently turned towards planning the WGISS-25 meeting in Sanya, Hainan Province, China, during the last week of February. This joint meeting with WGCV will have a special focus on working with two of the CEOS Virtual Constellations, Land Surface Imaging and Atmospheric Composition.

The WGISS members have lots of energy and ideas for how best to move forward. It's an exciting time. I invite WGISS representatives from all CEOS member agencies, with a special invitation to the new CEOS member agencies. I also extend a warm welcome for a return presence from members who, like me, have been out of the action for a time. And I very much look forward to working with you all.

Best wishes, Martha

INSIDE THIS ISSUE

GCMD and GFZ ISDC Collaboration

By Bernd Ritschel, GFZ-ISDC, Team Leader

Bernd Ritschel, GFZ-ISDC Team Leader.

The GeoForschungsZentrum Potsdam (GFZ) Information Systems and Data Center (ISDC) provides an online portal for geoscientific data, corresponding metadata, and related Earth Science data tools. The majority of data relates to Earth's gravity field and satellite geomonitoring products. The ISDC portal provides an intuitive design for access to this information. The GCMD discovery system has been a beneficial model for the ISDC, which integrates the DIF XML schemata. Currently more than 50 ISDC data products are referenced in the GCMD. In addition, related ISDC platforms and instruments have been described using the GCMD's ancillary descriptions. Components addressed below will help improve collaboration and the user experience between GCMD and ISDC.

Information System and Data Center

The collaboration between the GFZ ISDC and the GCMD will be enhanced by:

1. Harmonizing the DIF XML Schemata.
2. Defining API's for the exchange of DIF metadata documents on a regular basis.
3. Developing synchronization techniques for ISDC and GCMD metadata documents.
4. Further development of the DIF standard.
5. Ingesting references to related metadata documents (e.g. documentation) and to literature (journals, books, etc.).
6. Extending the GCMD vocabulary (science and related keywords).
7. Further development of the metadata authoring tools.
8. Semantics (Object-oriented approach and Web Ontology Languages).
9. Introducing Web 2.0 applications.
10. Sharing descriptions on ISDC related Platforms and Instruments for expanded ancillary descriptions.

Experiences and Recommendations for the IDN – Results from WGISS 24

By Tyler Stevens, GCMD, GIS/Services Coordinator

The Committee on Earth Observing Satellites (CEOS) Working Group on Information Systems and Services (WGISS) met in Oberpfaffenhofen, Germany on October 15-19, thirteen years after the previous meeting there in September of 1994. For the first time ever, I traveled outside the United States, which was undoubtedly one of the most exciting experiences of my life. As a geographer, I was keen to explore the physical and cultural landscape of Germany. This put a new perspective on international collaboration, as I witnessed firsthand the importance of working with the international science community on Earth Observation data and services. I represented Lola Olsen, NASA, as IDN task lead, for the IDN task team.

The IDN Task Team began with a review of the minutes from WGISS 23 and a discussion on the status of IDN action items. Next, a summary of user statistics, specifically focusing on usage patterns, helped the participants understand more about our users, followed by the future development plans for the IDN with a detailed look at MD 9.8 and MD 10.0 features. IDN contributions to GEOSS and the evolution of controlled vocabularies in the IDN were then discussed. The process of revising keywords is a lengthy process; however, the long-term success is invaluable to the Earth science community for the discovery of data and services. The IDN session ended with comments and questions, which were formulated into a list of recommendations.

1. IDN/GCMD and ISDC (Bernd) should set up a telecon for collaboration. Bernd expressed interest in visiting NASA in mid 2008. He also invited us back to Germany.
2. The IDN should summarize their GEOSS contributions in a one-page summary.
3. The IDN should evaluate the addition of OGC Service keyword taxonomy to current Service taxonomy or have a portal to map GCMD service keywords to OGC keywords.
4. The IDN needs to communicate keyword and DIF/SERF changes to CEOS. There was some concern that the community was not informed through the Interop. (See pages 6 and 7.)
5. The IDN should investigate the support of an OGC catalogue service to the IDN/GCMD for greater interoperability.
6. The IDN was asked to contribute their experience with harvesting for the CEOS Interoperability Handbook.
7. The IDN should provide automatic reminders for updating data set and service descriptions.
8. The IDN should register the DIF and SERF standard in the GEOSS Standards Registry.

NASA Sensor Web work was presented by Karen Moe. Earth observation, aircraft, and ground-based sensors were discussed. Key features of Sensor Webs are targeted observations through dynamic tasking and incorporation of feedback to adapt specific operations such as weather forecasts. Terence van Zyl from the Meraka Institute in South Africa expressed interest in the IDN's sensor web work, specifically relating to the expanded instrument and platform descriptions. He recommended that a collaboration be developed to enhance the work already being done by the IDN to create a robust sensor web network.

As an outcome of the CEOS WGISS meeting, several action items were addressed to the IDN.

24-8: Ken McDonald to create a services.ceos.org sub-domain which points to the CEOS Services portal on the IDN. Coordination with Tyler Stevens/IDN to determine where to point the sub-domain will be required.

24-10: Tyler Stevens to register the services.ceos.org service in the GEO registry of services.

24-24: Tyler Stevens to coordinate the group of Bernd Ritschel, Jolyon Martin, Jean-Pierre Antikidis, Karen Moe, Wyn Cudlip and Terence van Zyl to create a list of requirements for evaluation by the IDN team and presentation at WGISS-25. These requirements shall describe a cross-mission search capability, which would enable users to search missions and sensors by application.

24-35: Task Team leaders should review their WGISS web pages and send content updates to Ken McDonald, NOAA.

CEOS WGISS 24 Participants
First Row: Ivan Petiteville (ESA) (left) officially transferred the Chair(person)ship to Martha Maiden (NASA) (right).

Just In Time

By Dr. Jianping Mao, GCMD, Task Lead

Lola Olsen (left) and Jianping Mao (right) planning for WGISS-25 in Hainan.

I am the new contract task lead for the GCMD, as of September 2007, and arrived just in time to assist as "interpreter" at the upcoming WGISS-25 meeting in China. I am an atmospheric scientist with expertise in remote sensing and climate changes and a great interest in the applications of remote sensing data. I first contemplated working for the GCMD in the early 90's when I was a graduate student at the University of Maryland and used the GCMD to discover the data for my thesis. I have been observing the growth of the GCMD since then and finally had the opportunity to work for this fantastic project. I was inspired by the dedication and integrity of NASA project manager, Lola Olsen, and the great teamwork of her talented staff.

I grew up in China and came to the United States in 1990 to study for my doctoral degree. After a two-year postdoc at the University of Maryland, I began my career at the NASA Goddard Space Flight Center with several challenging projects, ranging from sensor and retrieval algorithm development to data analyses and applications. I highly regard the research and social value of data, especially NASA Earth Science data. I will work with the entire GCMD team to promote data sharing, accessibility, and usability to maintain and enhance the value of NASA's investment in the development and maintenance of Earth observation flight missions. Both Lola and I are thrilled to be working together to enhance the visibility and viability of the IDN.

Future WGISS-25 Meeting in Hainan, China

By Chrissy Chiddo, GCMD, Multimedia Specialist

The next WGISS meeting will be held on February 25-29, 2008 in Sanya City, located in the Hainan Province. Located south of China, Hainan is the second largest ocean island and the smallest land province in China. Hainan occupies an area of 35,000 square kilometers and has a population of 7.11 million people. Haikou City is the capital, which is located in the northern part of the island and is the political, economic, cultural and transportation center of the province. Transportation on this island is well developed with air, railway, and water transports around the island.

Sanya Bay of the Hainan Island

Known for its natural beauty, visitors refer to Hainan as the "Oriental Hawaii." It has 850,000 acres of green mountains, serene rainforest, 100 miles of coast line, beaches, hotels, and golf courses. The suggested time to visit Hainan is between November and March. The climate is warm year-round and sunny most of the time. The average temperature in January and February is 77° F, so it is an ideal place for those fond of swimming and bathing. Sanya, one of the most popular destinations for vacationers, is famous for its tropical beaches, such as Tianya Haijiao (End of Heaven) and Dadonghai.

Map of Sanya City on the Hainan Island

Famous places to visit include the scenic spot of End-of-the-Earth, Dadong River, Yalong Bay, and the Five Ministers Memorial Tower which houses statues and memorial tablets for each of the five ministers since 1889.

To make room reservations at the beautiful Tianfuyuan Resort, please visit: http://www.tianfuyuan.com/en/index.htm

International Polar Year (IPY) Data Management

By Mark A. Parsons, NSIDC, Co-Chair of IPY Data Management and Policy Sub-Committee

The International Polar Year 2007 - 2008 (IPY) may be the most ambitious coordinated international science program ever attempted. Under the sponsorship and endorsement of the International Council for Science (ICSU) and the World Meteorological Organization, more than 60 countries are participating in 228 projects — spanning the full range of physical, life and social sciences. The IPY science plan[1] presents a coordinated program to address six global, interdisciplinary themes that specifically link researchers to address critical issues that lie beyond the understanding of individual disciplines. Further, IPY seeks to establish an ongoing legacy of enhanced observing systems.

The heart of IPY is the vast and diverse data collected now, in the past, and through ongoing programs. The success of IPY will be contingent on the availability, usability, and preservation of those data. As such, IPY presents an acute data management challenge; it also presents a rare opportunity for international resolve and a time for scientific enthusiasm. The Electronic Geophysical Year (eGY) and its broadly endorsed Declaration for a Science Information Commons enhance this opportunity.[2] ICSU and WMO have established an IPY Data and Information Service (IPYDIS)[3] to help realize this opportunity and address the challenge of IPY data management.

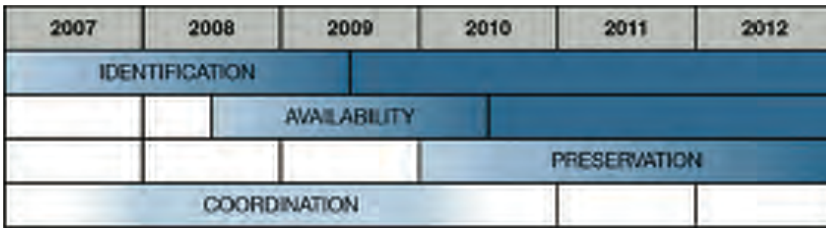
The International Polar Year Data Management is an international federation of data centers, archives, and networks–working to ensure proper stewardship of IPY and related data. The GCMD is a key component of the IPYDIS and provides metadata creation and data discovery services through the IPY metadata portal.[4] CEOS Members also participate in the IPYDIS, and we continue to seek organizations and individuals to assist in the IPY data management challenge.

The IPY Data Policy and Management Subcommittee has developed a basic three-point strategy for IPY data management:

1. Identify what data are to be collected as part of IPY.
   Goal: all metadata by June 2009
2. Determine how and where those data will be available.
   Goal: ongoing demonstrations of data integration, all data available March 2010.
3. Ensure the long-term preservation of IPY data.
   Goal: all data in secure archives by March 2012.

This is summarized in the figure below.

IPY Data Activities Task Summary and Schedule



GCMD's IPY metadata portal will be a key tool in identifying IPY data sets and will link with other metadata portals as appropriate. Shared metadata will be described according to the IPY Metadata profile developed by the IPY Data Committee.[5] The profile is a set of required fields and vocabularies that can be applied to several metadata standards, including the GCMD's Directory Interchange Format (DIF). Projects should develop the most comprehensive metadata possible to ensure broad and enduring data use.

To facilitate the acquisition of metadata, the publication of data, and ultimately the long-term archiving of data, the U. S National Science Foundation supports a data coordination office at the National Snow and Ice Data Center (NSIDC). The Norwegian Meteorological Institute supports an additional coordination office focused on operational data issues.[6] Other countries are also establishing national coordination efforts.

This is only a first step toward effective and lasting stewardship of IPY data. To fulfill the IPY goal of a data legacy and sustained data stewardship will require broad participation from the international community. For more information, contact ipydis@ipydis.org or IDN User Support at http://gcmd.nasa.gov/MailComments/

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[1] http://www.ipy.org/index.php?/ipy/detail/the_scope_of_science_for_the_international_polar_year/
[2] See http://egy.org/ for details on the Declaration and endorsing organizations and individuals.
[3] http://ipydis.org
[4] http://gcmd.nasa.gov/portals/ipy/
[5] http://ipydis.org/data/metadata.html
[6] http://ipycoord.met.no/

Reintroducing the CEOS IDN Interoperability Forum

The following two messages will soon be released through the Interoperability Forum, using this new address: **ceos-idn-interop@lists.nasa.gov**.

IDN Interop Message #1

Welcome back to the CEOS IDN Interoperability Forum. The Interoperability Forum has moved to a new address. Starting soon, please send your requests/comments to the new location for the Forum: **ceos-idn-interop@lists.nasa.gov.** We regret forgoing the use of the valuable Interoperability Forum to discuss recent software and keyword modifications. We have received many inquiries and concerns related to these modifications. From this time forward, we plan to use the CEOS IDN Interoperability Forum more consistently to communicate upcoming software and keyword changes.

All MD9.7 and 9.7.1 modifications can be found at:
http://gcmd.nasa.gov/Aboutus/software_docs/MD9_7_release_announcement.html
The DIF XML schema can be found at: **http://gcmd.nasa.gov/Aboutus/xml/dif/dif_v9.7.1.xsd**
The SERF XML schema can be found at: **http://gcmd.nasa.gov/Aboutus/xml/serf/serf_v9.7.1.xsd**

A summary of recent modifications is listed below:

Schema Changes:

1) Extended science keyword taxonomy from three levels to five. The levels are now: Topic, Term, Variable_Level_1, Variable_Level_2, and Variable_Level_3.
2) Extended keyword hierarchies for geographic location.
3) Extended keyword hierarchies for Chronostratigraphic_Units (geologic time).
4) Upgraded Related_URL field with a 2-level hierarchy.
5) Provided XML namespaces within records.
6) Added the ability to label directory entries as "Private". This allows contributors to flag data set descriptions that are temporarily or permanently restricted to public view.

Science Keyword Changes:

Modifications are reflective of the expanded breadth of metadata coverage and closer scrutiny within the vocabularies. [See keyword rules: http://gcmd.gsfc.nasa.gov/Resources/valids/rules.html]

The modifications at the Topic and Term levels include:
(1) ATMOSPHERE > ATMOSPHERIC CHEMISTRY
(2) BIOLOGICAL CLASSIFICATION (new topic)
(3) BIOSPHERE > ECOLOGICAL DYNAMICS

Additional changes were made for the topic, "MODELS" under services keywords. New platform and instrument hierarchies were also implemented.

The addition of new keywords and related keyword changes remain in progress at this time. You may view the current GCMD keyword list at: http://gcmd.gsfc.nasa.gov/Resources/valids/archives/keyword_list.html. Future keyword changes will be posted to the Interoperability Forum and mapped to any former keywords. We encourage you, as a member of the Forum, to suggest upgrades, additions, or modifications after the new version of the keywords is released. See "Procedures for GCMD Keyword Modification: http://gcmd.nasa.gov/Resources/valids/valids_proc.html.

Disclaimer: Our staff is fully engaged in maintaining and expanding the directory. We may not be able to respond immediately to suggestions and questions, as resources are limited. We appreciate your patience and value feedback related to the GCMD/IDN of interest to the Earth Science community. [If you wish to be added to or removed from this mailing list, please contact Rosy Cordova at: Rosy.M.Cordova@nasa.gov]

IDN Interop Message #2

This message notifies participants of the following DIF/SERF XML schema changes in upcoming releases. You are invited to initiate further discussion on any of these changes. Please reply by February 22, 2008 ONLY if you disagree with the proposed modifications.

I. Replace <Reference> with <References_or_Publications> in the DIF/SERF XML schema and the DIF/SERF display.

"Publications" describe key bibliographic citations pertaining to data sets or sevices. Bibliographic citations may be provided in styles used by professional scientific journals such as APA or MLA.

"References" describe documents from which authoritative information can be obtained but are not limited to standard reference works, such as user guides, white papers, etc.

Based on these definitions, we suggest that the field should become: “References or Publications”. Both may be useful in assisting the user by providing references and/or publications.

II. Replace <Parameters> with <Science_Keywords> in the DIF/SERF XML schema.

The word, “Parameters”, is broadly inclusive and less descriptive than “Science Keywords”. “Science Keywords" better describes the essence of what is being offered.

III. Replace <Service_Parameters> with <Service_Keywords> in the SERF XML schema.

“Service_Keywords" better describes the essence of what is being offered. These keywords are synonymous with the GCMD’s “Controlled Vocabulary” and are also referenced as the GCMD “Taxonomy”.

IV. Replace <Keyword> with <Associated_Keywords> in the DIF/SERF XML schema.

The more descriptive term, "Associated Keywords", allows author(s) to provide additional (uncontrolled) words or phrases to further describe the data set or service. This field may be used to enter keywords in alternative language(s), in preparation for ontological capabilities.

V. Replace <Sensor_Name> with <Instrument_Sensor_Name> in the DIF/SERF XML schema.

The relationship between sensors and instruments is relevant in several cases. "Instruments" can hold multiple "sensors”. For example, the TIROS Operational Vertical Sounder (TOVS) is made up of multiple sensors: the High Resolution Infrared Radiation Sounder (HIRS/2), the Microwave Sounding Unit (MSU), and the Stratospheric Sounding Unit (SSU). Beginning with the NOAA-9 spacecraft, the Solar Backscatter Ultraviolet Radiometer Version 2 (SBUV/2) was added to the TOVS instrument (as a fourth sensor). Therefore, to be technically correct, we believe that the sequence, Instrument_Sensor, more appropriately describes the relationship between the two terms. For example, in the case of the instrument, TOVS, the appropriate Instrument_Sensor name should be TOVS_MSU or TOVS_SSU, TOVS_HIRS2, or TOVS-SBUV2. If no instrument is associated, the sensor name may be used alone.

VI. Replace <Source_Name> with <Platform_Name> in the DIF/SERF XML schema.

"Source" is a nebulous description of the field being referenced. "Platform" more accurately describes the concept of instruments and or sensors associated with a stationary or mobile "platform". Actually, a platform could be a person, who carries a GPS.

GCMD Activities at the American Geophysical Union (AGU) Meeting in December of 2007

By Tyler Stevens, GCMD, GIS/Services Coordinator

Tyler presenting at the NASA booth.

Tyler and Jianping at the eGY booth.

Tyler Stevens and Jianping Mao represented the Global Change Master Directory (GCMD) at the American Geophysical Union (AGU) meeting on December 10-14, 2007 in San Francisco, CA. Over 15,000 participated in the meeting, during which topics of interest in the Earth and space sciences were highlighted. In recognition of NASA's 50th anniversary, exhibits and presentations showcased the past, present, and future of NASA science. The GCMD gave two presentations: "Contributions to the International Polar Year (IPY)", and "Accessing Earth Observation Instrument and Platform Descriptions through NASA's GCMD".

Please visit http://www.agu.org/meetings/fm07/ for the detailed scientific program.

The GCMD representatives were invited to demonstrate their contributions to the Electronic Geophysical Year (eGY) at the eGY booth. eGY is an initiative that provides the international geoscientific community an opportunity to engage in e-science approaches to issues of data management, access to data, data preservation, data discovery, data rescue, capability building, and outreach. The eGY is in progress through 2008. For more information on eGY, visit http://www.egy.org/index.php.

UWG Recommendation Initiates Development of Strategic Plan

By Lola Olsen, IDN, Task Team Lead

The final GCMD Users' Working Group Report has been completed. In response to a primary recommendation by the GCMD's Science User Working Group (UWG) at the June 2007 meeting, a strategic plan has been developed and made available to the User Working Group members for review. The draft plan is available for your review at http://gcmd.gsfc.nasa.gov/Aboutus/strategicplan.html.

The plan sets forth the mission and vision of the project and then delineates the GCMD/IDN's strategic goals. For each strategic goal, key performance indicators were determined to later assess progress toward the goals. A "Return-On-Investment" analysis was also completed to target the prioritization of plans to meet each goal. The plan also includes an analysis of the project's strengths, weaknesses, opportunities, and threats, along with methods to build on the strengths, resolve the weaknesses, exploit opportunities, and avoid threats.

Dr. Wyn Cudlip, the CEOS IDN's UWG representative, will respond to the plan during the UWG briefing at the WGISS-25 IDN session. Comments are welcome during this briefing.

Proposed IDN Task Team Meeting Agenda

By Lola Olsen, IDN, Task Team Lead

Monday, February 25, 2008

14:50 Reemergence of the Interop Forum/Communications
14:55 Update on directory population and usage
15:00 New in MD9.8 (release scheduled for early spring.)
15:05 Finding Earth Observation Platforms and Instruments; Feedback from WGISS Action Item 24-24
15:10 Progress in Development of Controlled Vocabularies
15:12 Node Reports /Collaborations
15:14 UWG Briefing: GCMD Strategic Plan (Dr. Wyn Cudlip)
15:20 Comments/Questions

Welcome to Alicia Aleman

By Lola Olsen, IDN, Task Team Lead

Alicia Aleman, new GCMD Ecological Information Coordinator.

Welcome to Alicia Aleman, who will serve as our primary collaborator with the USGS Biological Resources Division, to develop metadata for biological/ecological data sets for the NBII Clearinghouse. She comes to the IDN via NASA's Earth Science News Team where she contributed to the public communication of NASA-related Earth science research. Previously, she developed biology and Earth science content for standardized tests administered in the United States and Qatar. As a test developer she learned to analyze and assess students' understanding of scientific concepts. Most rewarding personally, however, were the many years spent working in science education and outreach with non-profit organizations, such as the Monterey Bay Aquarium. She is grateful to have helped people discover and connect with science in new ways. "My love of science and my belief that science should be accessible to everyone continue to motivate me both personally and professionally."

A first generation Cuban-American, she grew up in Texas and attended the University of Miami, where she earned a degree in Biology and Marine Science. After college she moved to California, where she lived for several years before moving to Maryland. "I have enjoyed living in different parts of the United States, as well as exploring other countries and cultures. On one trip, I spent two months driving through Mexico, Belize, and Guatemala. I have returned several times to visit other Latin American countries, including Costa Rica and Nicaragua."

We value Alicia's diverse experiences and her potentially unique contribution to interagency and international efforts. We anticipate a valuable collaboration, as she has stated that she is "pleased to be working alongside the IDN team, whose dedication is inspiring."